Exhibit E

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

GPNE CORP., Plaintiff, vs. NOKIA CORPORATION, ET AL., Defendants.		Civil No. 5:12-CV-03056-LHK

PLAINTIFF'S FIRST AMENDED
DISCLOSURES PURSUANT TO PATENT L.R. 3-1 AND 3-2

Plaintiff GPNE Corp. submits these disclosures pursuant to Patent L.R. 3-1 and 3-2 and the Court's October 10, 2012, Case Management Order and the Court's Order Granting Unopposed Motion to Serve Amended Infringement Contentions (Dkt. No. 72) regarding United States Patent Nos. 7,555,267 ("the '267 patent"), 7,570,954 ("the '954 patent"), and 7,792,492 ("the '492 patent") (collectively, the "patents-in-suit").

GPNE makes these Disclosures based on the information presently available to it. Discovery in this case is not complete, and GPNE reserves the right to amend or supplement these Disclosures as permitted by the Federal Rules of Civil Procedure, by the Local Rules of the Northern District of California, and by order of the Court.

I. DISCLOSURES UNDER PATENT L.R. 3-1

a. "Each claim of each patent in suit that is allegedly infringed by each opposing party, including for each claim the applicable statutory subsections of 35 U.S.C. §271 asserted"

With regard to devices[1] that have the ability to send and receive data via the General Packet Radio Service ("GPRS"), Enhanced GPRS ("EGPRS), and/or Enhanced Data Rates for GSM Evolution ("EDGE"), GPNE asserts that Nokia has infringed and/or continues to infringe the claims set forth below ("GPRS Claims"):

'267 Patent Claims	'954 Patent Claims	'492 Patent Claims
4, 11-14, 18, 30-32, 42	16-20, 22	28, 37, 42-44, 55, 58-59, 62

GPRS, EGPRS, and EDGE are simply referred to as "GPRS" for the sake of brevity in this document and its attachments.

With regard to devices that have the ability to send and receive data using Long Term Evolution ("LTE"), GPNE asserts that Nokia has infringed and/or continues to infringe the claims set forth below ("LTE Claims"):

'267 Patent Claims	'954 Patent Claims	'492 Patent Claims
2, 4, 42	16-17, 22	28, 37

b. "Separately for each asserted claim, each accused apparatus, product, device, process, method, act, or other instrumentality ("Accused Instrumentality") of each opposing party of which the party is aware. This identification shall be as specific as possible. Each product, device, and apparatus shall be identified by name or model number, if known. Each method or process shall be identified by name, if known, or by any product, device, or apparatus which, when used, allegedly results in the practice of the claimed method or process"

The "Accused Instrumentality" for the asserted claims above are Nokia devices (such as, but not limited to, cellular phones) that Nokia either made, used, sold, offered for sale, or imported into the United States since June 2009 that have the ability to send and receive data using GPRS and/or LTE. Exhibit B contains a list of such devices that GPNE is currently aware of based on publically available information and the limited discovery received to date. It is

[1] See Exhibit B.

believed that Nokia continues to develop its product offerings and may introduce additional devices to the market that may infringe the asserted claims. GPNE reserves the right to supplement or amend these contentions to include such devices once they are offered for sale in the United States, or any other devices that GPNE may learn about in the course of discovery.

c. "A chart identifying specifically where each limitation of each asserted claim is found within each Accused Instrumentality, including for each limitation that such party contends is governed by 35 U.S.C. § 112(6), the identity of the structure(s), act(s), or material(s) in the Accused Instrumentality that performs the claimed function"

GPNE directs Nokia to the charts attached hereto as Exhibits A1 – A6.

To aid in the understanding of Exhibit B and the claim charts, for a given product, a "Y" in the column "GPRS Functionality?" indicates the product infringes the claims applicable to the GPRS Claims identified in section I(a), above. Likewise, a "Y" in the column "LTE Functionality?" indicates the product infringes the claims applicable to the LTE Claims identified in section I(a), above. A "Y" in the column "Touchscreen?" indicates the product infringes the claims that require "a touch sensitive display input device."

Nokia directly infringes the asserted claims by making, using, selling and/or offering to sell in the United States products and/or services that practice all of the elements of the asserted claims. See 35 U.S.C. § 271(a). Preliminary infringement claim charts setting forth GPNE's infringement theory are provided in Exhibits A1 – A6.[2] These claim charts are based on public information currently available to GPNE and GPNE's analysis is ongoing. GPNE has already sought discovery regarding the accused devices from Nokia while this case was pending in the District of Hawaii. Accordingly, GPNE reserves the right to amend and/or supplement these

[2] While GPNE's infringement theory is based on publically available information, it reserves the right to supplement or amend these contentions based on information produced and/or learned in discovery. See Patent L.R. 3-6.

contentions as proprietary information is obtained through the course of discovery. See Patent L.R. 3-6.

d. "For each claim which is alleged to have been indirectly infringed, an identification of any direct infringement and a description of the acts of the alleged indirect infringer that contribute to or are inducing that direct infringement. Insofar as alleged direct infringement is based on joint acts of multiple parties, the role of each such party in the direct infringement must be described"

At the present time, GPNE is not asserting claims of indirect infringement. It is GPNE's contention that Nokia infringes the asserted claims by making, selling, and offering for sale the accused products. GPNE further contends that the accused products infringe "out of the box" without any interaction by Nokia's customers.

e. "Whether each limitation of each asserted claim is alleged to be literally present or present under the doctrine of equivalents in the Accused Instrumentality"

Based on GPNE's current understanding of the claim language and publicly available information regarding the Accused Instrumentalities, GPNE asserts that Nokia literally infringes the asserted claims. Any claim element not literally present in the Accused Instrumentalities as set forth in the claim charts is found in those Instrumentalities under the doctrine of equivalents because any differences between such claim element and the Accused Instrumentalities are insubstantial and/or the Accused Instrumentalities perform substantially the same function, in substantially the same way to achieve substantially the same result as the corresponding claim element(s). In addition, GPNE reserves the right to assert infringement solely under the doctrine of equivalents with respect to any particular claim element(s) if warranted by discovery received from Nokia, or a claim construction ruling from the Court, or both.

f. "For any patent that claims priority to an earlier application, the priority date to which each asserted claim allegedly is entitled"

The '267, '954, and '492 patents all claim priority to United States Patent No. 5,542,115 filed on June 24, 1994. GPNE further asserts that the patents-in-suit are entitled to a conception date of at least June 3, 1993.

g. "If a party claiming patent infringement wishes to preserve the right to rely, for any purpose, on the assertion that its own apparatus, product, device, process, method, act, or other instrumentality practices the claimed invention, the party shall identify, separately for each asserted claim, each such apparatus, product, device, process, method, act, or other instrumentality that incorporates or reflects that particular claim"

GPNE does not assert that its own apparatus, product, device, process, method, act, or other instrumentality practices the claimed invention.

h. "If a party claiming patent infringement alleges willful infringement, the basis for such allegation"

GPNE has not alleged willful infringement. However, GPNE reserves the right to amend or supplement its contentions and/or pleadings to add allegations of willfulness based on evidence that may be learned during the course of discovery.

II. DISCLOSURES UNDER PATENT L.R. 3-2

a. "Documents (e.g., contracts, purchase orders, invoices, advertisements, marketing materials, offer letters, beta site testing agreements, and third party or joint development agreements) sufficient to evidence each discussion with, disclosure to, or other manner of providing to a third party, or sale of or offer to sell, or any public use of, the claimed invention prior to the date of application for the patent in suit. A party's production of a document as required herein shall not constitute an admission that such document evidences or is prior art under 35 U.S.C. § 102"

GPNE is not presently aware of any responsive documents for the patents-in-suit.

b. "All documents evidencing the conception, reduction to practice, design, and development of each claimed invention, which were created on or before the date of application for the patent in suit or the priority date identified pursuant to Patent L.R. 3-1(f), whichever is earlier"

GPNE refers Nokia to documents bates labeled GPNECorp. 00000298-422.

c. "A copy of the file history for each patent in suit"

GPNE refers Nokia to documents bates labeled GPNECorp. 00000001-1570.

d. "All documents evidencing ownership of the patent rights by the party asserting patent infringement"

GPNE notes that the face of the patents-in-suit list GPNE Corp. as the assignee. See GPNECorp. 0000001494, 0000001519, and 0000001544. Assignments for the patents-in-suit appear in the respective file histories. See GPNECorp. 0000000503, 0000000861, and 0000001484. GPNE also refers Nokia to documents bates labeled GPNECorp. 00000005148-5151, and 5702-5707. GPNE also identifies GPNE-NOK00022974-23009.

e. "If a party identifies instrumentalities pursuant to Patent L.R. 3-1(g), documents sufficient to show the operation of any aspects or elements of such instrumentalities the patent claimant relies upon as embodying any asserted claims"

GPNE is not relying on any products pursuant to Patent L.R. 3-1(g), thus there are no responsive documents.

Dated: February 15, 2013

Respectfully Submitted,

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ATTORNEYS FOR PLAINTIFF GPNE CORP.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on February 15, 2013, a true and correct copy of Plaintiff's First Amended Disclosures Pursuant to Patent L.R. 3-1 and 3-2 was duly served on the following via e-mail pursuant to the parties' agreement under Fed. R. Civ. P. 5(b)(2)(E):

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ATTORNEYS' EYES ONLY

EXHIBIT A1
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,555,267
AGAINST NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's GPRS, EGPRS, and EDGE Products[1]

[1] This chart maps the '267 patent against Nokia's GPRS, EGPRS and EDGE products (such as, but not limited to, cellular phones and tablets). On information and belief, Nokia's GPRS, EGPRS and EDGE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "GPRS Functionality?" column). On information and belief, all of Nokia's GPRS, EGPRS and EDGE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's GPRS, EGPRS and EDGE products operate with respect to sending and receiving information using GPRS, EGPRS or EDGE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "GPRS Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's GPRS, EGPRS and EDGE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

[redacted]

1	A first node in a data network, the data network including a plurality of nodes including a first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
1(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
1(b)	a memory providing code to the least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

1(c)	an interface controlled by the least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
1(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1, 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.

1(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.
(c)(3)	transmit the reserve access request signal in the second slot in response to the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

1(c)(4)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the first data packets; and	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
1(c)(5)	transmit the first data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.
1(c)(6)	wherein the first data packets can be transmitted during transmission of a request signal by a second node into a third slot assigned to the second node.	The TDMA structure of a GPRS network controller provides for different channels whereby the Phone can transmit data packets on one channel (i.e., the PDTCH) while a second Phone is sending a PACKET CHANNEL REQUEST message in a third time slot on a different channel (e.g., PRACH or RACH).

4	The first node of claim 1, wherein the interface is further configured to receive a clocking signal with which the first node can synchronize signals.	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1, 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.

8	The first node of claim 1, wherein the first node can further transmit the first data packets simultaneous with transmission of a grant from a controller to a third node assigning a fourth slot to the third node for transmission of a reserve request signal.	The TDMA structure of a GPRS base station provides for different channels whereby the Phone can transmit data packets on one channel (i.e., the PDTCH) while the network transmits a PACKET UPLINK ASSIGNMENT message to a different Phone in a third time slot on a different channel (i.e., PCCCH).

9	The first node of claim 1, wherein the request by the second node is provided in the third slot on a first frequency differing from a second frequency wherein the first data packets are transmitted by the first node.	The TDMA structure of a GPRS air interface provides for different frequency whereby the Phone can transmit data packets on one channel (i.e., the PDTCH) while a second Phone is sending a PACKET CHANNEL REQUEST message in a third time slot on a different frequency (e.g., PRACH or RACH).

11	The first node of claim 1, wherein the interface is further configured to: transmit information relating to a total number of related ones of the first data packets being transmitted together.	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.

12	The first node of claim 11, wherein the total number of related packets being transmitted comprises a count value to enable a receiving node in the plurality of nodes to determine when the first data packets being transmitted together are completely received.	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The network sets a final block indicator (FBI) bit in downlink RLC data blocks to indicate the last RLC data block of the downlink TBF. See 3GPP TS 44.060 § 10.4.8.

13	The first node of claim 12, wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

14	The first node of claim 13, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

18	The first node of claim 11, wherein a final data packet from total number of related packets comprises information which indicates that the final data packet is the last data packet.	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.

19	The first node of claim 1, wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

20	The first node of claim 19, wherein additional node identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

21	The first node of claim 19, wherein the second slot is assigned to the first node independent of the randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

22	The first node of claim 19, wherein the interface is further configured to: transmit information relating to a total number of related ones of the first data packets being transmitted together.	Data is transmitted from the Phone to the network in RLC uplink data blocks. The format of these RLC uplink data blocks is set forth in 3GPP TS 44.060 § 10.2.2. One of the header fields in an RLC uplink data block is a COUNTDOWN VALUE. See 3GPP TS 44.060 § 10.4.6. The value of the COUNTDOWN VALUE is 15 when there are 15 or more blocks of data left to transmit. Otherwise, the COUNTDOWN VALUE decreases according to the number of data blocks left when there are less than 15 blocks. See 3GPP TS 44.060 § 9.3.1, Annex F.

23	The first node of claim 22, wherein the total number of related packets being transmitted comprises a count value to enable a receiving node in the plurality of nodes to determine when the first data packets being transmitted together are completely received.	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The network sets a final block indicator (FBI) bit in downlink RLC data blocks to indicate the last RLC data block of the downlink TBF. See 3GPP TS 44.060 § 10.4.8.

30	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale the communication products listed in Exhibit B that purport to be operable with what is known as the GPRS or EDGE "standards" (such products are referred to herein as "Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
30(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
30(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

30(c)	at least one interface controlled by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
30(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1, 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. . If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.

30(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.
30(c)(3)	transmit the reserve request signal in the second slot subsequent to receiving the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

30(c)(4)	receive a second grant signal subsequent to transmission of the reserve request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the first data packets; and	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
30(d)(1)	transmit the first data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.

30(d)(2)	wherein the interface further transmits information relating to a total number of related ones of the first data packets being transmitted together, wherein the total number of related packets being transmitted comprises a count value to enable a receiving node in the plurality of nodes to determine when the first data packets being transmitted together are completely received.	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6. The network sets a final block indicator (FBI) bit in downlink RLC data blocks to indicate the last RLC data block of the downlink TBF. See 3GPP TS 44.060 § 10.4.8.

31	The first node of claim 30, wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

32	The first node of claim 31, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

39	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale the communication products listed in Exhibit B that purport to be operable with what is known as the GPRS or EDGE "standards" (such products are referred to herein as "Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
39(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
39(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

39(c)	at least one interface controlled by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
39(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1, 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.

39(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.
39(c)(3)	transmit the reserve request signal in the second slot subsequent to receiving the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

39(c)(4)	receive a second grant signal subsequent to transmission of the reserve request signal, said second grant signal including information related to an allocation of additional resources for transmitting the first data packets; and	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
39(c)(5)	transmit the first data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.
39(d)(1)	wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, and	The PACKET CHANNEL REQUEST message contains 2 or 3 random bits (for a Two Phase Access Request) depending on whether the PACKET CHANNEL REQUEST message is 8 or 11 bits. See 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3.

39(d)(2)	wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

40	The first node of claim 39, wherein the second slot is assigned to the first node independent of the randomly generated information.	The second slot and the randomly generated information are not related.

41	The first node of claim 39, wherein additional node identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

42	The first node of claim 39, wherein each of the first grant, the reserve request signal, the second grant signal, and the first data packets are provided on differing frequencies.	The first grant (*i.e.*, PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message) is received on either the PCCCH or CCCH, which is on a first frequency (1st Freq.). The reserve request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is on a second frequency (2nd. Freq.). If the authorization signal is an RLC/MAC Control block, the message containing the block is received on a DL_PDTCH, which is on a third frequency (3rd Freq.). The data packets are transmitted on the PDTCH, which is on a fourth frequency (4th Freq.). The PCCCH/CCCH and DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The PCCCH/CCCH and DL_PDTCH are on two different ARFCNs. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.

45	The first node of claim 39, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.

3GPP TS 4.08 - Version 7.21.0.

3GPP TS 5.02 - Version 8.11.0.

3GPP TS 5.05 - Version 8.11.0.

3GPP TS 25.224 - Version 3.9.0.

3GPP TS 44.060 - Version 10.4.0.

3GPP TS 45.002 - Version 10.0.0.

3GPP TS 45.010 - Version 10.0.

EXHIBIT A2
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,570,954
AGAINST NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's GPRS, EGPRS, and EDGE Products[1]

[1] This chart maps the '954 patent against Nokia's GPRS, EGPRS and EDGE products (such as, but not limited to, cellular phones and tablets). On information and belief, Nokia's GPRS, EGPRS and EDGE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "GPRS Functionality?" column). On information and belief, all of Nokia's GPRS, EGPRS and EDGE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's GPRS, EGPRS and EDGE products operate with respect to sending and receiving information using GPRS, EGPRS or EDGE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "GPRS Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's GPRS, EGPRS and EDGE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

[redacted]

13	A first node in a data network, the data network including a plurality of nodes including a first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
13(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
13(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

13(c)	an interface controlled by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
13(d)(1)	receive a clocking signal used to enable requests including a first request from the first node, the clocking signal provided from the first communication controller;	Synchronization bursts are broadcast from the network and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
13(d)(2)	transmit the first request signal from the first node to the first communication controller when the first node has a communication message to transmit;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16. This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

13(d)(3)	receive an authorization signal from the first communication controller; and	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
13(d)(4)	transmit the communication message to the first communication controller subsequent to receiving said authorization signal;	The Phone transmits a communication message consisting of data packets to the base station via the PDTCH. See 3GPP TS 44.060 § 1.4.

13(e)(1)	wherein each of the clocking signal, the first request signal, the authorization signal, and the communication message are transmitted on differing frequencies, and	The clocking signal (*i.e.*, synchronization bursts) is received on the SCH, which is on a first frequency (1st Freq.). The first request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which on a second frequency (2nd Freq.). If the authorization signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is on a third frequency (3rd Freq.). If the authorization signal is an RLC/MAC Control block, the message is received on a DL_PDTCH, which is on a third frequency (3rd Freq.). Communication messages (*i.e.*, data packets) are transmitted on the PDTCH, which is on a fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
13(e)(2)	wherein the clocking signal enables a second request signal to be transmitted to the first communication controller by a second node, and	The synchronization bursts on the SCH are broadcast to all Phones within a cell. All phones, including a second Phone within the same cell as the first Phone, must decode these synchronization bursts to be properly synched in the cell in order to transmit and receive requests, including PACKET RESOURCE REQUEST messages. See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30.
13(e)(3)	wherein the second request signal can be provided simultaneous with transmission of the communication message by the first node.	The TDMA structure of a GPRS air interface provides for different channels whereby the Phone can transmit data packets on one channel (i.e., the PDTCH) while a second Phone is sending a PACKET RESOURCE REQUEST.

15	The first node of claim 13, wherein the first request signal and the second request signal are contention free request signals.	The PACKET RESOURCE REQUEST messages transmitted by the first and second Phones are made using resources previously granted to the Phones by the network via the PACKET UPLINK ASSIGNMENT message and therefore are contention free (cp. a PACKET CHANNEL REQUEST message). See 3GPP TS §§ 7.1.3, 11.2.16 and 11.2.29.

16	The first node of claim 13, wherein the clocking signal comprises a clock-aligning signal used to synchronize the requests.	Synchronization bursts are broadcast from the network and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.

17	The first node of claim 13, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

18	The first node of claim 13, wherein the communication message from the first node comprises multiple data packets, and wherein the interface of the first node is further controlled by the processor to transmit information relating to a total number of related ones of the multiple data packets being transmitted together, the total number providing a count value for the first communication controller to determine when the multiple data packets being transmitted together are completely received.	The communication message contains multiple data packets. Data is transmitted from the Phone to the network in RLC uplink data blocks. The format of these RLC uplink data blocks is set forth in 3GPP TS 44.060 § 10.2.2. One of the fields in the RLC uplink data block is the Countdown Value. See 3GPP TS 44.060 § 10.2.2. The Countdown Value is set to 0 when the last block is transmitted. See 3GPP TS 44.060 § 9.3.2.4.2; see also § 9.3.1.1

19	The first node of claim 18, wherein the interface is further controlled by the processor to: transmit randomly generated information created by the first node; and receive said randomly generated information returned from the first communication controller to enable identification of the first node.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

20	The first node of claim 19**,** wherein the first node further comprises a touch sensitive display input device	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

22	The first node of claim 13, wherein the interface is further controlled by the processor to: transmit randomly generated information created by the first node; and receive said randomly generated information returned from the first communication controller to enable identification of the first node.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

23	A first node in a data network, the data network including a plurality of nodes including a first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
23(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
23(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

23(c)	an interface controlled by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
23(d)(1)	receive a clocking signal used to enable requests including a first request from the first node, the clocking signal provided from the first communication controller;	Synchronization bursts are broadcast from the network and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
23(d)(2)	transmit the first request signal from the first node to the first communication controller when the first node has a communication message to transmit;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

23(d)(3)	receive an authorization signal from the first communication controller; and	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
23(d)(4)	transmit the communication message to the first communication controller subsequent to receiving said authorization signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.

23(e)(1)	wherein each of the clocking signal, the authorization signal, the first request signal and the communication message are transmitted on four separate frequency channels, and	The clocking signal (*i.e.*, synchronization bursts) is received on the SCH, which is on a first frequency (1st Freq.). The first request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is on a second frequency (2nd Freq.). If the authorization signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is on a third frequency (3rd Freq.). If the authorization signal is an RLC/MAC Control block, the message is received on a DL_PDTCH, which is on a third frequency (3rd Freq.). Communication messages (*i.e.*, data packets) are transmitted on the PDTCH, which is on a fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
23(e)(2)	wherein the clocking signal can be received by the first node simultaneous with reception of the authorization signal.	The Phone can receive synchronization burst at the same time as the PACKET UPLINK ASSIGNMENT message or RLC/MAC Control block.

24	The first node of claim 23, wherein the communication message from the first node comprises multiple data packets, and wherein the interface of the first node is further controlled by the processor to transmit information relating to a total number of related ones of the multiple data packets being transmitted together, the total number providing a count value for the first communication controller to determine when the multiple data packets being transmitted together are completely received.	The communication message contains multiple data packets. Data is transmitted from the Phone to the network in RLC uplink data blocks. The format of these RLC uplink data blocks is set forth in 3GPP TS 44.060 § 10.2.2. One of the fields in the RLC uplink data block is the Countdown Value. See 3GPP TS 44.060 § 10.2.2. The Countdown Value is set to 0 when the last block is transmitted. See 3GPP TS 44.060 § 9.3.2.4.2; see also § 9.3.1.1 ("When the mobile station transmits the last RLC data block currently in the send buffer for the TBF. . . the RLC data block shall have CV set to the value '0'").

25	The first node of claim 24, wherein the interface is further controlled by the processor to: transmit randomly generated information created by the first node; and receive said randomly generated information returned from the first communication controller to enable identification of the first node.	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.

26	The first node of claim 25, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.

3GPP TS 4.08 - Version 7.21.0.

3GPP TS 5.02 - Version 8.11.0.

3GPP TS 5.05 - Version 8.11.0.

3GPP TS 25.224 - Version 3.9.0.

3GPP TS 44.060 - Version 10.4.0.

3GPP TS 45.002 - Version 10.0.0.

3GPP TS 45.010 - Version 10.0.

EXHIBIT A3
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,792,492
AGAINST NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's GPRS, EGPRS, and EDGE Products[1]

[1] This chart maps the '492 patent against Nokia's GPRS, EGPRS and EDGE products (such as, but not limited to, phones and tablets). On information and belief, Nokia's GPRS, EGPRS and EDGE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "GPRS Functionality?" column). On information and belief, all of Nokia's GPRS, EGPRS and EDGE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's GPRS, EGPRS and EDGE products operate with respect to sending and receiving information using GPRS, EGPRS or EDGE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "GPRS Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's GPRS, EGPRS and EDGE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

[redacted]

2	A first node in a data network, the data network including a plurality of nodes including the first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
2(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
2(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

2(c)	an interface configured by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
2(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1 and 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.

2(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.
2(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
2(c)(4)	transmit the reserve access request signal in the second slot in response to the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16. This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16, and 11.2.29.

2(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
2(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.
2(d)(1)	wherein a subsequent request signal by a second node into a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node; and	The TDMA structure of a GPRS air interface provides for different channels whereby the Phone can transmit data packets on one channel (i.e., the PDTCH) while a second Phone is sending a PACKET CHANNEL REQUEST message in a third time slot on a different channel (e.g., PRACH or RACH).

2(d)(2)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	The aligning signal (*i.e.*, synchronization bursts) is received on the SCH, which is the first frequency (1st Freq.). The reserve access request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is the second frequency (2nd Freq.). If the second grant signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is a third frequency (3rd Freq.). If the second grant signal is an RLC/MAC Control block, the message is received on a DL_PDTCH, which is a third frequency (3rd Freq.). Data packets are transmitted on the UL_PDTCH, which is the fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
2(d)(3)	wherein the aligning signal is distinct from the first grant signal.	The synchronization bursts and the PACKET UPLINK ASSIGNMENT message are different signals having different formats. Compare 3GPP TS 45.002 v10.0.0 §§ 5.2.5 with 3GPP TS 44.060 Table 11.2.29.1

16	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
16(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
16(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

16(c)	at least one interface configured by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
16(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1 and 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is found in the PACKET CHANNEL REQUEST message, which is either in 8-bit or 11-bit format. The establishment cause in the message indicates the reason for the establishment of a TBF, i.e., One Phase Access Request or Two Phase Access Request. The particular bit sequence that specifics the One or Two Phase Access request is set forth in 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.

16(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.
16(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
16(c)(4)	transmit the reserve access request signal in the second slot subsequent to receiving the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

16(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: • Frequency Parameters; • Dynamic allocation structure; • TBF Starting Time; • TIMESLOT_NUMBER; • NUMBER OF RADIO BLOCKS ALLOCATED; • USF; and • USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
16(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.
16(d)(1)	wherein the interface further transmits information relating to a count value,	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.
16(d)(2)	wherein the interface transmits terminal indication information indicating that the final data packet is a last data packet,	The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.

16(d)(3)	wherein a subsequent reserve access request signal from a second node provided in a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node; and	The transmission of data packets can occur while a second Phone is sending a PACKET RESOURCE REQUEST message in a third time slot.
16 (d)(4)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	The aligning signal (*i.e.*, synchronization bursts) is received on the SCH, which is on a first frequency (1st Freq.). The reserve access request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is on a second frequency (2nd Freq.). If the second grant signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is on a third frequency (3rd Freq.). If the second grant signal is an RLC/MAC Control block, the message is received on the DL_PDTCH, which is on a third frequency (3rd Freq.). Data packets are transmitted on the UL_PDTCH, which is on a fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
	wherein the aligning signal is distinct from the first grant signal.	The synchronization bursts and the PACKET UPLINK ASSIGNMENT message are different messages having different formats which are normally transmitted on different channels.

17	The first node of claim 16, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

28	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	The node is a cellular phone, tablet, computer, or other electronic device that sends and receives messages over a GPRS/EGPRS wireless telecommunications network (referred to herein as the "Phone").
28(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
28(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory
28(c)	an interface configured by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.

28(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1 and 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.
28(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.

28(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 04.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
28(c)(4)	transmit the reserve access request signal in the second slot in response to the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16 and 11.2.29.

28(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: Frequency Parameters; Dynamic allocation structure; TBF Starting Time; TIMESLOT_NUMBER; NUMBER OF RADIO BLOCKS ALLOCATED; USF; and USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
28(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.
28(c)(7)	wherein a subsequent request signal by a second node into a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node;	The transmission of data packets can occur while a second Phone is sending a PACKET RESOURCE REQUEST message in a third time slot.
28(c)(8)	wherein the subsequent request signal by the second node is provided in the third slot on a differing frequency from the data packets transmitted by the first node; and	The PACKET RESOURCE REQUEST message sent by the second Phone is carried on a different ARFCN from the ARFCN specified in the PACKET UPLINK ASSIGNMENT message which is used by the first Phone to transmit data packets.

28(d)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	The aligning signal (*i.e.*, synchronization bursts) is received on the SCH, which is on a first frequency (1st Freq.). The reserve access request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is on a second frequency (2nd Freq.). If the second grant signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is on a third frequency (3rd Freq.). If the second grant signal is an RLC/MAC Control block, the message is received on the DL_PDTCH, which is on a third frequency (3rd Freq.). Data packets are transmitted on the UL_PDTCH, which is on a fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
28(e)	wherein the aligning signal is distinct from the first grant signal.	The synchronization bursts and the PACKET UPLINK ASSIGNMENT message are different messages having different formats which are normally transmitted on different channels.

37	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using GPRS, EGPRS, or EDGE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
37(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
37(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.
37(c)	at least one interface configured by the processor to:	The interface is the interface between the baseband processor and the radio portions of the Phone. See Exhibit E for images and the location of the interface.

37(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	The random access request signal is the PACKET CHANNEL REQUEST message sent by the Phone to the network. See 3GPP TS 44.060 §§ 7.1.2.1 and 11.2.5. This message is transmitted in a timeslot on the PRACH channel (Packet Random Access Channel). See 3GPP TS 44.060 § 7.1.2.1; 3GPP TS 25.224 § 4.7.1. If no PBCCH is defined for the cell, the PACKET CHANNEL REQUEST message is transmitted on the RACH. Information that indicates that the Phone requires an allocation of resources is the bit sequence that specifies the PACKET CHANNEL REQUEST message as being a two phase access request. 3GPP TS 44.060 Tables 11.2.5.1 and 11.2.5.2.
37(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is either a PACKET UPLINK ASSIGNMENT message or an IMMEDIATE ASSIGNMENT message. If a PBCCH is configured, the first grant signal is a PACKET UPLINK ASSIGNMENT message transmitted by the network to the Phone on the Packet Common Control channel (PCCCH) in a second timeslot. See 3GPP TS 44.060 §§ 7.1.2.2 and 11.2.29. The information relating to an allocation of a time slot is found in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 § 11.2.29.1. If a PBCCH is not configured, the first grant signal is an IMMEDIATE ASSIGNMENT message transmitted by the network to the Phone on the Common Control channel (CCCH). This message also has an allocation of resource which the Phone uses to transmit subsequent messages. "TIMESLOT_NUMBER (3 bit field): This field indicates the timeslot assigned for transfer of a single RLC/MAC block on the uplink. This field is coded as the binary representation of the timeslot number as defined in 3GPP TS 45.010." See 3GPP TS 44.060 Table 11.2.29.2.

37(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.
37(c)(4)	transmit the reserve access request signal in the second slot subsequent to receiving the first grant signal;	The reserve access request signal is a PACKET RESOURCE REQUEST message that is transmitted in the timeslot specified in the TIMESLOT_NUMBER field of the PACKET UPLINK ASSIGNMENT message. See 3GPP TS 44.060 §§ 7.1.3 and 11.2.16 This message is sent on the PACCH. See 3GPP TS 44.060 §§ 7.1.2.2, 11.2.16, and 11.2.29.

37(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information related to an allocation of additional resources for transmitting the data packets;	The Phone receives two additional messages after transmitting the PACKET RESOURCE REQUEST message. Each of these messages may satisfy the "second grant signal" limitation. 1. A PACKET UPLINK ASSIGNMENT message is received over the PACCH. Fields relating to "an allocation of additional resources for transmitting the data packets" include the following in the PACKET UPLINK ASSIGNMENT message: Frequency Parameters; Dynamic allocation structure; TBF Starting Time; TIMESLOT_NUMBER; NUMBER OF RADIO BLOCKS ALLOCATED; USF; and USF_2. See 3GPP TS 44.060 Tables 11.2.29.1 and 11.2.29.2. 2. An RLC/MAC Control block with a MAC header (collectively, a "Control Block") is received over the PDTCH. See 3GPP TS 44.060 § 10.3.1. This Control Block contains a USF field which relates to the provision of additional resources for transmitting data packets. See 3GPP TS 44.060 §§ 10.4.1 and 8.1.1.1.
37(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits data packets via the PDTCH. See 3GPP TS 44.060 § 1.4.

37(d)(1)	wherein the first grant returns randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant,	The PACKET CHANNEL REQUEST message includes 2 or 3 random bits (depending on whether the PACKET CHANNEL REQUEST message is in 8-bit or 11-bit format and the type of access requested). See 3GPP TS 44.060 § 12.11; see also 3GPP TS 44.060 § 11.2.5, Tables 11.2.5.1, 11.2.5.2, and 11.2.5.3. The PACKET UPLINK ASSIGNMENT message (*i.e.*, the first grant) contains a PACKET REQUEST REFERENCE field that includes, among other information, the 2 or 3 random bits originally contained in the PACKET CHANNEL REQUEST message. 3GPP TS 44.060 Table 11.2.29.1, § 12.11.
37(d)(2)	wherein the interface further transmits information relating to a count value,	The Phone includes in the MAC header of the RLC uplink data blocks a Countdown Value (CV) field. This field allows the network to calculate the number of RLC data blocks remaining to be transmitted. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.
37(d)(3)	wherein the interface further transmits terminal indication information indicating that a final data packet is a last data packet; and	The Phone transmits a "0" value in the CV field when transmitting the final RLC uplink data block. See 3GPP TS 44.060 § 9.3.1 and 10.4.6.

37(d)(4)	wherein the aligning signal is received on first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are independent frequencies	The aligning signal (*i.e.*, synchronization bursts) is received on the SCH, which is on a first frequency (1st Freq.). The reserve access request signal (*i.e.*, PACKET RESOURCE REQUEST message) is transmitted on the UL_PACCH, which is on a second frequency (2nd Freq.). If the second grant signal is a second PACKET UPLINK ASSIGNMENT message, the message is received on the DL_PACCH, which is on a third frequency (3rd Freq.). If the second grant signal is an RLC/MAC Control block, the message is received on the DL_PDTCH, which is on a third frequency (3rd Freq.). Data packets are transmitted on the UL_PDTCH, which is on a fourth frequency (4th Freq.). The SCH and DL_PACCH/DL_PDTCH are downlink channels. The UL_PACCH and UL_PDTCH are uplink channels. Since Phones are required to transmit and receive on different frequencies, the uplink and downlink frequencies are different. See 3GPP TS 5.05 § 2. Channels are carried on particular ARFCNs. The SCH and DL_PACCH/DL_PDTCH are on two different ARFCNs. The ARFCN on which the SCH resides carries signals for defining a cell, whereas the DL_PACCH and DL_PDTCH are on an ARFCN for GPRS packet data channels. The UL_PACCH and UL_PDTCH are on different ARFCNs, as the ARFCN of the UL_PDTCH is specified by the PACKET UPLINK ASSIGNMENT message.
37 (d)(5)	wherein the aligning signal is distinct from the first grant signal.	The synchronization bursts and the PACKET UPLINK ASSIGNMENT message are different messages having different formats which are normally transmitted on different channels.

38	The first node of claim 37, wherein the second slot is assigned to the first node independent of the randomly generated information.	The assignment of the second slot is not related to the randomly generated information.

39	The first node of claim 37, wherein subscriber identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

40	The first node of claim 37, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

41	The first node of claim 37, wherein the interface is further configured to receive the aligning signal with which the first node can synchronize signals.	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.

44(a)	The first node of claim 37, wherein subsequent to transmission of the data packets, the first node receives a first acknowledgement on a downstream frequency, said first acknowledgement on the downstream frequency including information which informs the first node that the data packets have been received, and	The Phone receives a PACKET UPLINK ACK/NACK message after it transmits data packets indicating, among other things, whether certain data packets were received. 3GPP TS 44.060 § 11.2.28. In this message, the FINAL_ACK_INDICATOR is set to 1. 3GPP TS 44.060 §§ 12.3 and 12.3.1.
44(b)	wherein subsequent to receiving the first acknowledgement on the downstream frequency, the first node responds with a subsequent acknowledgement on a subsequent upstream frequency which acknowledges receipt of the first acknowledgement.	The Phone transmits a PACKET CONTROL ACKNOWLEDGEMENT message after receiving the PACKET UPLINK ACK/NACK message. This message acknowledges the PACKET UPLINK ACK/NACK message. See 44.060 §§ 9.3.2.4 and 11.2.2.

55	The first node of claim 37, wherein a number of the differing frequencies for reserved slot operations allocated at any particular point in time for utilization by the first node is constant at four frequencies.	At any one time, there are only two upstream and two downstream frequencies used for reserve slot operations.

56	The first node of claim 55, wherein the second slot is assigned to the first node independent of the randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

57	The first node of claim 55, wherein subscriber identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes a TLLI in the PACKET RESOURCE REQUEST message it transmits. See 3GPP TS 44.060 § 11.2.16. This value is associated with a subscriber. See 3GPP TS 44.060 § 12.16.

58	The first node of claim 55, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

59	The first node of claim 55, wherein the interface is further configured to receive the aligning signal with which the first node can synchronize signals.	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.

62	The first node of claim 55, wherein subsequent to transmission of the data packets, the first node receives a first acknowledgement on a downstream frequency, said first acknowledgement on the downstream frequency including information which informs the first node that the data packets have been received, and wherein subsequent to receiving the first acknowledgement on the downstream frequency, the first node responds with a subsequent acknowledgement on a subsequent upstream frequency which acknowledges receipt of the first acknowledgement.	The Phone transmits a PACKET CONTROL ACKNOWLEDGEMENT message after receiving the PACKET UPLINK ACK/NACK message. This message acknowledges the PACKET UPLINK ACK/NACK message. See 44.060 §§ 9.3.2.4 and 11.2.2.

63	The first node of claim 55, wherein the third frequency may also carry downstream data packets to the plurality of nodes including the first node.	The DL-PACCH can be used to send data to a different phone in a different time slot.

66	The node of claim 55, wherein the second frequency remains allocated for further reserve access request signals while the first node is sending the data packets on the fourth frequency.	Additional PACKET RESOURCE REQUEST messages can be transmitted on the PACCH while data packets are transmitted on the PDTCH.

67	The first node of claim 66, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

68	The first node of claim 66, wherein the interface is further configured to receive the aligning signal with which the first node can synchronize signals.	Synchronization bursts are broadcast from the base station and received by the Phone on the Synchronization channel (SCH). See 3GPP TS 5.02 § 3.3.2.2; 3GPP TS 4.08 § 9.1.30. The synchronization burst includes the TDMA frame number (FN) which informs the Phone of the current TDMA frame within the hyperframe. See 3GPP TS 5.02 §§ 3.3.2.2.1 and 4.3.3; see also 3GPP 45.002 § 3.3.2.2.1.

71	The first node of claim 66, wherein subsequent to transmission of the data packets, the first node receives a first acknowledgement on a downstream frequency, said first acknowledgement on the downstream frequency including information which informs the first node that the data packets have been received, and wherein subsequent to receiving the first acknowledgement on the downstream frequency, the first node responds with a subsequent acknowledgement on a subsequent upstream frequency which acknowledges receipt of the first acknowledgement.	The Phone transmits a PACKET CONTROL ACKNOWLEDGEMENT message after receiving the PACKET UPLINK ACK/NACK message. This message acknowledges the PACKET UPLINK ACK/NACK message. See 44.060 §§ 9.3.2.4 and 11.2.2.

72	The first node of claim 66, wherein the third frequency may also carry downstream data packets to the plurality of nodes including the first node.	The DL-PACCH can be used to send data to a different phone in a different time slot.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.

3GPP TS 4.08 - Version 7.21.0.

3GPP TS 5.02 - Version 8.11.0.

3GPP TS 5.05 - Version 8.11.0.

3GPP TS 25.224 - Version 3.9.0.

3GPP TS 44.060 - Version 10.4.0.

3GPP TS 45.002 - Version 10.0.0.

3GPP TS 45.010 - Version 10.0.

EXHIBIT A4
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,555,267
AGAINST DEFENDANT NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's LTE Products[1]
1	A first node in a data network, the data network including a plurality of nodes including a first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.

[1] This chart maps the '267 patent against Nokia's LTE products (such as, but not limited to, cellular phones and tablets). On information and belief, Nokia's LTE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "LTE Functionality?" column). On information and belief, all of Nokia's LTE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's LTE products operate with respect to sending and receiving information using LTE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "LTE Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's LTE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

1(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
1(b)	a memory providing code to the least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.
1(c)	an interface controlled by the least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.

1(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a subframe on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
1(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
1(c)(3)	transmit the reserve access request signal in the second slot in response to the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the subframe described in the Random Access Response. See 3GPP TS 36.321 § 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the subframe described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.
1(c)(4)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the first data packets; and	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.
1(c)(5)	transmit the first data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
1(c)(6)	wherein the first data packets can be transmitted during transmission of a request signal by a second node into a third slot assigned to the second node.	The transmission of data packets can occur while a second phone is sending a RRC Connection Request message in a third subframe.

2	The first node of claim 1, wherein each of the first grant, the reserve request signal, the second grant signal, and the first data packets are provided on differing frequencies.	In FDD LTE systems, uplink and downlink signals are transmitted on different frequencies. See 3GPP TS 36.104 § 5. The sub-carriers on which the Random Access Response and UL-GRANT are received can be different, as can the sub-carriers on which the RRC Connection Request and data packets are transmitted.

4	The first node of claim 1, wherein the interface is further configured to receive a clocking signal with which the first node can synchronize signals.	The primary and secondary synchronization signals are provided by a base station and enable the Phone to synchronize itself with a controller. See 3GPP TS 36.211 § 6.11.

7	The first node of claim 4, wherein the clocking signal can be received by the first node simultaneous with reception of the second grant signal.	The primary and secondary synchronization signals can be received at the same time as the DCI Format 0 message.

8	The first node of claim 1, wherein the first node can further transmit the first data packets simultaneous with transmission of a grant from a controller to a third node assigning a fourth slot to the third node for transmission of a reserve request signal.	The Phone can transmit data packets at the same time the network transmits a Random Access Response to a third phone, where the Random Access Response specifies a resource block to the third phone to be used for the transmission of an RRC Connection Request.

10	The first node of claim 1, wherein a cell switching operation to change frequencies for transmission from the first node between a first communication controller and a second communication controller occurs at a time after transmission of all of the first request, the second request, the first grant, the second grant, and commencing the transmission of the first data packets.	During the transmission of data packets, the Phone can end its communications with one base station and commence communications with another base station using different subcarriers.

19	The first node of claim 1, wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The Random Access Preamble transmitted by the Phone represents randomly generated information. See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 36.321 § 5.1, and 36.211 § 5.7. This Preamble is randomly chosen from 64 possible Preambles. The Random Access Response includes an identification of the particular Preamble selected by the Phone. See 3GPP TS 36.321 § 5.1, and 36.211 § 5.7.

20	The first node of claim 19, wherein additional node identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes additional identification information in the RRC Connection Request (an S-TMSI or a 40 bit random number). See 3GPP TS 36.331 § 5.3.3.3.

21	The first node of claim 19, wherein the second slot is assigned to the first node independent of the randomly generated information.	The second subframe and the randomly generated information are not related.

39	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
39(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
39(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

39(c)	at least one interface controlled by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
39(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a subframe on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be determined.
39(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
39(c)(3)	transmit the reserve request signal in the second slot subsequent to receiving the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the subframe described in the Random Access Response. See 3GPP TS 36.321 § 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the subframe described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.

39(c)(4)	receive a second grant signal subsequent to transmission of the reserve request signal, said second grant signal including information related to an allocation of additional resources for transmitting the first data packets; and	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.
39(c)(5)	transmit the first data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
39(d)(1)	wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, and	The Random Access Preamble contains the Random Access Preamble Index, which is randomly selected from a range of possible values by the Phone. See 3GPP TS 36.321 § 5.1.3.
39(d)(2)	wherein the first grant returns said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.	The Random Access Response contains the Random Access Preamble Index. This Index is used by the Phone to determine, in part, whether the Phone is the desired recipient of the Response. See 3GPP TS 36.321 § 5.1.4.

40	The first node of claim 39, wherein the second slot is assigned to the first node independent of the randomly generated information.	The second subframe and the randomly generated information are not related.

41	The first node of claim 39, wherein additional node identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone includes additional identification information in the RRC Connection Request (an S-TMSI or a 40 bit random number). See 3GPP TS 36.331 § 5.3.3.3.

42	The first node of claim 39, wherein each of the first grant, the reserve request signal, the second grant signal, and the first data packets are provided on differing frequencies.	In FDD LTE systems, uplink and downlink signals are transmitted on different frequencies. See 3GPP TS 36.104 § 5. For downlink transmissions, an LTE base station determines the specific frequency on which a Random Access Response or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the Random Access Response and DCI Format 0 messages will regularly be received on different frequencies. For uplink transmissions, an LTE base station determines the specific frequency on which Buffer Status Report control elements / RRC Connection Request messages and data packets are transmitted. See 3GPP 36.300 TS § 11.1. Given the number of frequencies used by Phones for transmitting these signals/messages, in operation, the Buffer Status Report control elements / RRC Connection Request messages and data packets will regularly be transmitted on different frequencies.

43	The first node of claim 42, wherein the interface is further configured to receive a clocking signal with which the first node can synchronize signals.	The primary and secondary synchronization signals are provided by a base station and enable the Phone to synchronize itself with a controller. See 3GPP TS 36.211 § 6.11.

45	The first node of claim 39, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.

3GPP TS 36.104 – Version 9.0.0.

3GPP TS 36.211 – Version 9.0.0.

3GPP TS 36.212 – Version 9.0.0.

3GPP TS 36.300 – Version 9.0.0.

3GPP TS 36.321 – Version 9.0.0.

3GPP TS 36.331 – Version 9.0.0.

EXHIBIT A5
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,570,954
AGAINST DEFENDANT NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's LTE Products[1]
13	A first node in a data network, the data network including a plurality of nodes including a first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.

[1] This chart maps the '954 patent against Nokia's LTE products (such as, but not limited to, phones and tablets). On information and belief, Nokia's LTE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "LTE Functionality?" column). On information and belief, all of Nokia's LTE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's LTE products operate with respect to sending and receiving information using LTE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "LTE Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's LTE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

13(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
13(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.
13(c)	an interface controlled by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
13(d)(1)	receive a clocking signal used to enable requests including a first request from the first node, the clocking signal provided from the first communication controller;	The primary and secondary synchronization signals are provided by a base station and enable the Phone to send "first request signals." The Phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble. See 3GPP TS 36.211 § 6.11.

13(d)(2)	transmit the first request signal from the first node to the communication when the first node has a communication message to transmit;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a subframe on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 36.321 § 5.1, and 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
13(d)(3)	receive an authorization signal from the first communication controller; and	The Phone subsequently receives a DCI Format 0 message containing an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). 3GPP TS 36.212 § 4.2.
13(d)(4)	transmit the communication message to the first communication controller subsequent to receiving said authorization signal;	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." 3GPP TS 36.212 § 5.

13(e)(1)	wherein each of the clocking signal, the first request signal, the authorization signal, and the communication message are transmitted on differing frequencies, and	For the two downstream signals, the clocking signal (i.e., the synchronization signals) is received on a first frequency (1st Freq.) and the second grant signal (i.e., the DCI Format 0 message) is received on a third frequency (3rd Freq.). As for the two upstream signals, Random Access Preamble is transmitted on a second frequency (2nd Freq.) and the data packets are transmitted on a fourth frequency (4th Freq.). In FDD LTE, upstream messages are always transmitted on different frequencies than downstream messages. See 3GPP TS 36.104 § 5. Accordingly, the 1st and 3rd frequencies are always different than the 2nd and 4th frequencies. As between the 1st and 3rd frequencies, the synchronization signals are received on a restricted set of the available downstream frequencies, as compared to the DCI Format 0 messages. See 3GPP TS 36.300 § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. Thus, certain DCI Format 0 messages are transmitted on frequencies unavailable to synchronization signals. In addition, synchronization signals and DCI Format 0 messages are contained in resource elements. In a typical LTE implementation, resource elements can be received on any one of dozens of different frequencies (with the number of possible frequencies for receiving synchronization signals being less than the number of possible frequencies for receiving DCI Format 0 messages). See 3GPP 36.300 TS § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. An LTE base station determines the specific frequency on which a synchronization signal or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the synchronization signals and DCI Format 0 messages will regularly be received on different frequencies.

	(cont.)	As between the 2nd and 4th frequencies, the Random Access Preamble and data packets are transmitted in resource blocks/elements. See 3GPP 36.211 TS § 5.3.4 and 3GPP 36.300 TS §§ 5, 6.1.3.1, 10.1.5.1. In a typical LTE implementation, a given resource block/element can be transmitted on any one of dozens of different frequencies. See 3GPP 36.211 TS §5.2.3. An LTE base station determines the specific frequency on which a Random Access Preamble and data packets are transmitted. See 3GPP 36.300 TS § 11.1. Given the number of frequencies used by Phones for transmitting these signals/messages, in operation, the Random Access Preambles and data packets will regularly be transmitted on different frequencies.
13(e)(2)	wherein the clocking signal enables a second request signal to be transmitted to the first communication controller by a second node, and	In an LTE system, a second phone can also use the primary and secondary synchronization signals in transmitting a Random Access Preamble. The second phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble.
13(e)(3)	wherein the second request signal can be provided simultaneous with transmission of the communication message by the first node.	A base station in an LTE cellular system is designed to communicate with many phones at one time. In such a system, a second phone can transmit a Random Access Preamble at the same time the Phone is transmitting data packets.

16	The first node of claim 13, wherein the clocking signal comprises a clock-aligning signal used to synchronize the requests.	The primary and secondary synchronization signals are provided by a base station and enable the Phone to synchronize itself with a controller so that it can properly transmit signals. See 3GPP TS 36.211 § 6.11.

17	The first node of claim 13, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

22	The first node of claim 13, wherein the interface is further controlled by the processor to: transmit randomly generated information created by the first node; and receive said randomly generated information returned from the communication controller to enable identification of the first node.	The Random Access Preamble has a Random Access Preamble Index, which is randomly selected from a range of possible values by the Phone. See 3GPP TS 36.321 § 5.1.3. The Random Access Response contains the Random Access Preamble Index. This Index is used by the Phone to determine, in part, whether the Phone is the desired recipient of the Response. See 3GPP TS 36.321 § 5.1.4.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.3GPP TS 36.104 – Version 9.0.0.

3GPP TS 36.211 – Version 9.0.0.

3GPP TS 36.212 – Version 9.0.0.

3GPP TS 36.300 – Version 9.0.0.

3GPP TS 36.321 – Version 9.0.0.

3GPP TS 36.331 – Version 9.0.0.

EXHIBIT A6
INFRINGEMENT CONTENTIONS FOR U.S. PATENT NO. 7,792,492
AGAINST NOKIA

Claim/ Element No.	Claim Element	Accused Instrumentality - Nokia's LTE Products[1]
2	A first node in a data network, the data network including a plurality of nodes including the first node, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.

[1] This chart maps the '492 patent against Nokia's LTE products (such as, but not limited to, phones and tablets). On information and belief, Nokia's LTE products include but are not limited to certain products identified in Exhibit B (with a "Y" in the "LTE Functionality?" column). On information and belief, all of Nokia's LTE products must comply with certain industry standards in order to transmit and receive data over cellular communication networks. Thus, on information and belief, there are no material differences in the manner in which Nokia's LTE products operate with respect to sending and receiving information using LTE, and the analysis herein is representative of GPNE's contentions against all such products. To avoid any confusion, the theory of infringement outlined in this chart applies to all of the products listed in Exhibit B with a "Y" in the "LTE Functionality?" column.

Discovery is in its early stages. GPNE intends to seek discovery regarding the technical operation of Nokia's LTE products. Accordingly, GPNE reserves the right to amend or supplement these contentions as proprietary information is obtained from Nokia during the course of discovery. GPNE expects that these contentions may be subject to amendment or supplementation to identify additional products and/or services released, developed, or made available after the date on which these contentions are served, products and/or services discontinued before the date on which these contentions are served, or of which GPNE was not aware at the time of these contentions. GPNE also expects that these contentions may be subject to amendment or supplementation to rebut allegations of non-infringement (e.g., by adding information regarding infringement under the doctrine of equivalents) or, as noted above, to include information obtained during discovery.

2(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
2(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.
2(c)	an interface configured by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.

2(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a slot on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
2(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
2(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	The primary and secondary synchronization signals are provided by a base station and enable the Phone to send "first request signals." The Phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble. See 3GPP TS 36.211 § 6.11.
2(c)(4)	transmit the reserve access request signal in the second slot in response to the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the slot described in the Random Access Response. See 3GPP TS 36.321 § 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the slot described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.
2(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.

2(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
2(d)(1)	wherein a subsequent request signal by a second node into a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node; and	The structure of an LTE network allows LTE network controllers to provide for different frequency channels whereby the Phone can transmit data packets on one channel while a second Phone is sending a Random Access Preamble on a different frequency channel.

2(d)(2)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	For the two downstream signals, the aligning signal (*i.e.*, the synchronization signals) is received on the first frequency (1st Freq.) and the second grant signal (*i.e.*, the DCI Format 0 message) is received on a third frequency (3rd Freq.). As for the two upstream signals, the reserve access request signals (*i.e.*, the Buffer Status Report control element and the RRC Connection Request message) are transmitted on the second frequency (2nd Freq.) and the data packets are transmitted on the fourth frequency (4th Freq.). In FDD LTE, upstream messages are always transmitted on different frequencies than downstream messages. See 3GPP TS 36.104 § 5. Accordingly, the 1st and 3rd frequencies are always different than the 2nd and 4th frequencies. As between the 1st and 3rd frequencies, the synchronization signals are received on a restricted set of the available downstream frequencies, as compared to the DCI Format 0 messages. See 3GPP TS 36.300 § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. Thus, certain DCI Format 0 messages are transmitted on frequencies unavailable to synchronization signals. In addition, synchronization signals and DCI Format 0 messages are contained in resource elements. In a typical LTE implementation, resource elements can be received on any one of dozens of different frequencies (with the number of possible frequencies for receiving synchronization signals being less than the number of possible frequencies for receiving DCI Format 0 messages). See 3GPP 36.300 TS § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. An LTE base station determines the specific frequency on which a synchronization signal or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the synchronization signals and DCI Format 0 messages will regularly be received on different frequencies.

	(cont.)	As between the 2nd and 4th frequencies, the Buffer Status Report control elements / RRC Connection Request messages and data packets are transmitted in resource blocks. See 3GPP 36.211 TS § 5.3.4 and 3GPP 36.300 TS §§ 5, 6.1.3.1, 10.1.5.1. In a typical LTE implementation, a given resource block can be transmitted on any one of dozens of different frequencies. See 3GPP 36.211 TS §5.2.3. An LTE base station determines the specific frequency on which Buffer Status Report control elements / RRC Connection Request messages and data packets are transmitted. See 3GPP 36.300 TS § 11.1. Given the number of frequencies used by Phones for transmitting these signals/messages, in operation, the Buffer Status Report control elements / RRC Connection Request messages and data packets will regularly be transmitted on different frequencies.
2(d)(3)	wherein the aligning signal is distinct from the first grant signal.	The synchronization signals are different than the Random Access Response.

16	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
16(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
16(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory

16(c)	at least one interface configured by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
16(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a slot on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
16(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
16(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	The primary and secondary synchronization signals are provided by a base station and enable the Phone to send "first request signals." The Phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble. See 3GPP TS 36.211 § 6.11.

16(c)(4)	transmit the reserve access request signal in the second slot subsequent to receiving the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the slot described in the Random Access Response. See 3GPP TS 36.321 §§ 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the slot described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.
16(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.
16(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
16(d)(1)	wherein the interface further transmits information relating to a count value,	The Buffer Status Report control element contains a Buffer Size field. See 3GPP TS 36.321 §§ 5.4.5 and 6.1.3.
16(d)(2)	wherein the interface transmits terminal indication information indicating that the final data packet is a last data packet,	The Buffer Status Report control element contains a Buffer Size field. The value of this field is "0" where there is not more data in the buffer to be sent. The transmission of a Buffer Status Report with a Buffer Size field set to "0" indicates that the final packet sent by the Phone is the last packet. See 3GPP TS 36.321 §§ 5.4.5 and 6.1.3.
16(d)(3)	wherein a subsequent reserve access request signal from a second node provided in a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node; and	The structure of an LTE network allows LTE network controllers to provide for different frequency channels whereby the Phone can transmit data packets on one channel while a second Phone is sending a Buffer Status Report control element on a different frequency channel.

16 (d)(4)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	For the two downstream signals, the aligning signal (*i.e.*, the synchronization signals) is received on the first frequency (1st Freq.) and the second grant signal (*i.e.*, the DCI Format 0 message) is received on a third frequency (3rd Freq.). As for the two upstream signals, the reserve access request signals (*i.e.*, the Buffer Status Report control element and the RRC Connection Request message) are transmitted on the second frequency (2nd Freq.) and the data packets are transmitted on the fourth frequency (4th Freq.). In FDD LTE, upstream messages are always transmitted on different frequencies than downstream messages. See 3GPP TS 36.104 § 5. Accordingly, the 1st and 3rd frequencies are always different than the 2nd and 4th frequencies. As between the 1st and 3rd frequencies, the synchronization signals are received on a restricted set of the available downstream frequencies, as compared to the DCI Format 0 messages. See 3GPP TS 36.300 § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. Thus, certain DCI Format 0 messages are transmitted on frequencies unavailable to synchronization signals. In addition, synchronization signals and DCI Format 0 messages are contained in resource elements. In a typical LTE implementation, resource elements can be received on any one of dozens of different frequencies (with the number of possible frequencies for receiving synchronization signals being less than the number of possible frequencies for receiving DCI Format 0 messages). See 3GPP 36.300 TS § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. An LTE base station determines the specific frequency on which a synchronization signal or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the synchronization signals and DCI Format 0 messages will regularly be received on different frequencies.
	wherein the aligning signal is distinct from the first grant signal.	The synchronization signals are different than the Random Access Response.

17	The first node of claim 16, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

28	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
28(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
28(b)	a memory providing code to the at least one processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

28(c)	an interface configured by the at least one processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
28(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a slot on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
28(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
28(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	The primary and secondary synchronization signals are provided by a base station and enable the Phone to send "first request signals." The Phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble. See 3GPP TS 36.211 § 6.11.

28(c)(4)	transmit the reserve access request signal in the second slot in response to the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the slot described in the Random Access Response. See 3GPP TS 36.321 § 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the slot described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.
28(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information relating to an allocation of additional resources for transmitting the data packets;	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.
28(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
28(c)(7)	wherein a subsequent request signal by a second node into a third slot assigned to the second node can be transmitted during transmission of the data packets by the first node;	The structure of an LTE network allows LTE network controllers to provide for different frequency channels whereby the Phone can transmit data packets on one channel while a second Phone is sending a Random Access Preamble on a different frequency channel.
28(c)(8)	wherein the subsequent request signal by the second node is provided in the third slot on a differing frequency from the data packets transmitted by the first node; and	The structure of an LTE network allows LTE network controllers to provide for different frequency channels whereby the Phone can transmit data packets on one channel while a second Phone is sending a Random Access Preamble on a different frequency channel.

28(d)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are differing frequencies,	For the two downstream signals, the aligning signal (*i.e.*, the synchronization signals) is received on the first frequency (1st Freq.) and the second grant signal (*i.e.*, the DCI Format 0 message) is received on a third frequency (3rd Freq.). As for the two upstream signals, the reserve access request signals (*i.e.*, the Buffer Status Report control element and the RRC Connection Request message) are transmitted on the second frequency (2nd Freq.) and the data packets are transmitted on the fourth frequency (4th Freq.). In FDD LTE, upstream messages are always transmitted on different frequencies than downstream messages. See 3GPP TS 36.104 § 5. Accordingly, the 1st and 3rd frequencies are always different than the 2nd and 4th frequencies. As between the 1st and 3rd frequencies, the synchronization signals are received on a restricted set of the available downstream frequencies, as compared to the DCI Format 0 messages. See 3GPP TS 36.300 § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. Thus, certain DCI Format 0 messages are transmitted on frequencies unavailable to synchronization signals. In addition, synchronization signals and DCI Format 0 messages are contained in resource elements. In a typical LTE implementation, resource elements can be received on any one of dozens of different frequencies (with the number of possible frequencies for receiving synchronization signals being less than the number of possible frequencies for receiving DCI Format 0 messages). See 3GPP 36.300 TS § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. An LTE base station determines the specific frequency on which a synchronization signal or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the synchronization signals and DCI Format 0 messages will regularly be received on different frequencies.

28(d)	(cont.)	As between the 2nd and 4th frequencies, the Buffer Status Report control elements / RRC Connection Request messages and data packets are transmitted in resource blocks. See 3GPP 36.211 TS § 5.3.4 and 3GPP 36.300 TS §§ 5, 6.1.3.1, 10.1.5.1. In a typical LTE implementation, a given resource block can be transmitted on any one of dozens of different frequencies. See 3GPP 36.211 TS §5.2.3. An LTE base station determines the specific frequency on which Buffer Status Report control elements / RRC Connection Request messages and data packets are transmitted. See 3GPP 36.300 TS § 11.1. Given the number of frequencies used by Phones for transmitting these signals/messages, in operation, the Buffer Status Report control elements / RRC Connection Request messages and data packets will regularly be transmitted on different frequencies.
28(e)	wherein the aligning signal is distinct from the first grant signal.	The synchronization signals are different than the Random Access Response.

37	A first node in a data network, the data network including a plurality of nodes, the first node comprising:	Nokia makes, uses, sells and offers for sale products that have the ability to communicate using LTE "standards", including the communication products listed in Exhibit B, (such products are referred to herein as "the Phone"). These "standards" are set forth in technical documents promulgated by a group known as the 3rd Generation Partnership Project ("3GPP"). The node is a Phone, as well as any other communication device made, used, sold, offered for sale, or imported by Nokia that operates according to the 3GPP standards listed below.
37(a)	at least one processor;	The Phone contains a baseband processor for implementing the lower layer communication protocols that allow for communications between the Phone and the network. Upon information and belief, Nokia uses at least the following baseband processors in its products: (1) Qualcomm MDM9200 and (2) Texas Instruments 4376057 GAZ0035G. See Exhibit C for images and the location of the processor.
37(b)	a memory providing code to the processor; and	The Phone contains memory coupled to the baseband processor. This memory consists of RAM for storing a program when it is being executed and flash memory (a.k.a. ROM) for storing the program when the Phone is powered off. Often times, some portion of the total RAM in the Phone is found inside the same packaging that contains the baseband processor or is located on the same semiconductor die. See Exhibit D for images and the locations of the memory.

37(c)	at least one interface configured by the processor to:	The interface is the connection points between the Phone's baseband processor and the radio transceiver. For signals being transmitted from the Phone to the network, the baseband processor transmits MAC and Physical layer signals to the radio transceiver via this interface. The radio transceiver then processes the received signals and transmits the signals over the air via an antenna. For signals received by the Phone from the network, the radio transceiver converts the signals received from the antenna and transmits via the interface the converted MAC and Physical layer signals to the baseband processor for processing. See Exhibit E for images and the location of the interface.
37(c)(1)	transmit a random access request signal in a first slot, the random access request signal including information that allows determination that the first node requires an allocation of resources to transmit a reserve access request signal;	At the outset of a contention-based Random Access Procedure, the Phone transmits a Random Access Preamble in a slot on the PRACH (Physical Random Access Channel). See 3GPP TS 36.300 §§ 5.2.5 and 10.1.5, 3GPP TS 36.321 § 5.1, and 3GPP TS 36.211 § 5.7. The Random Access Preamble is transmitted in such a manner that an identifier associated with the Phone (the RA-RNTI) can be identified.
37(c)(2)	receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for subsequently transmitting data packets containing a message;	The first grant signal is a Random Access Response received on the Physical Downlink Shared Channel (PDSCH). This message contains a UL Grant that specifies resources to be used by the Phone when transmitting the "reserve access request" signal. See 3GPP TS 36.321 § 6.2.
37(c)(3)	receive an aligning signal which enables the first node to transmit the reserve access request signal;	The primary and secondary synchronization signals are provided by a base station and enable the Phone to send "first request signals." The Phone uses these signals to achieve receiver timing synchronization prior to transmitting a Random Access Preamble. See 3GPP TS 36.211 § 6.11.

37(c)(4)	transmit the reserve access request signal in the second slot subsequent to receiving the first grant signal;	There are two messages that may satisfy the "transmit the reserve access request signal." The first is a message containing a Buffer Status Report control element. The message containing this Buffer Status Report control element is transmitted in the slot described in the Random Access Response. See 3GPP TS 36.321 § 5.4.5 and 6.1.3. The second message is an RRC Connection Request message. This message is contained in the slot described in the Random Access Response. See 3GPP TS 36.321 § 6.2 and 3GPP TS 36.331 § 6.2.2.
37(c)(5)	receive a second grant signal subsequent to transmission of the reserve access request signal, said second grant signal including information related to an allocation of additional resources for transmitting the data packets;	The Phone subsequently receives a DCI Format 0 message with an uplink assignment. See 3GPP TS 36.321 § 5.4.1 and 3GPP TS 36.212 § 5.3.3.1.1. This message contains resource block assignment information and hopping resource allocation. 3GPP TS 36.212 § 5.3.3.1.1. This grant is transmitted on the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.212 § 4.2.
37(c)(6)	transmit the data packets in response to the second grant signal,	The Phone transmits user data packets via the Physical Uplink Shared Channel (PUSCH). Data packets are multiplexed onto transport blocks for transmission using the resources specified in the DCI Format 0 message received in the "second grant signal." See 3GPP TS 36.212 § 5.
37(d)(1)	wherein the first grant returns randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant,	The Random Access Preamble has a Random Access Preamble Index, which is randomly selected from a range of possible values by the Phone. See 3GPP TS 36.321 § 5.1.3. The Random Access Response contains the Random Access Preamble Index. This Index is used by the Phone to determine, in part, whether the Phone is the desired recipient of the Response. See 3GPP TS 36.321 § 5.1.4.
37(d)(2)	wherein the interface further transmits information relating to a count value,	The Buffer Status Report control element contains a Buffer Size field. See 3GPP TS 36.321 §§ 5.4.5 and 6.1.3.
37(d)(3)	wherein the interface further transmits terminal indication information indicating that a final data packet is a last data packet; and	The Buffer Status Report control element contains a Buffer Size field. The value of this field is "0" where there is not more data in the buffer to be sent. The transmission of a Buffer Status Report with a Buffer Size field set to "0" indicates that the final packet sent by the Phone is the last packet. See 3GPP TS 36.321 §§ 5.4.5 and 6.1.3.

37(d)(4)	wherein the aligning signal is received on a first frequency, the reserve access request signal is transmitted on a second frequency, the second grant signal is received on a third frequency and the data packets are transmitted on a fourth frequency, wherein the first frequency, the second frequency, the third frequency and the fourth frequency are independent frequencies	For the two downstream signals, the aligning signal (*i.e.*, the synchronization signals) is received on the first frequency (1st Freq.) and the second grant signal (*i.e.*, the DCI Format 0 message) is received on a third frequency (3rd Freq.). As for the two upstream signals, the reserve access request signals (*i.e.*, the Buffer Status Report control element and the RRC Connection Request message) are transmitted on the second frequency (2nd Freq.) and the data packets are transmitted on the fourth frequency (4th Freq.). In FDD LTE, upstream messages are always transmitted on different frequencies than downstream messages. See 3GPP TS 36.104 § 5. Accordingly, the 1st and 3rd frequencies are always different than the 2nd and 4th frequencies. As between the 1st and 3rd frequencies, the synchronization signals are received on a restricted set of the available downstream frequencies, as compared to the DCI Format 0 messages. See 3GPP TS 36.300 § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. Thus, certain DCI Format 0 messages are transmitted on frequencies unavailable to synchronization signals. In addition, synchronization signals and DCI Format 0 messages are contained in resource elements. In a typical LTE implementation, resource elements can be received on any one of dozens of different frequencies (with the number of possible frequencies for receiving synchronization signals being less than the number of possible frequencies for receiving DCI Format 0 messages). See 3GPP 36.300 TS § 5.1.7.3 and 3GPP 36.211 TS § 6.8.5. An LTE base station determines the specific frequency on which a synchronization signal or DCI Format 0 message is received. Given the number of frequencies used by Phones for receiving these signals/messages, in operation, the synchronization signals and DCI Format 0 messages will regularly be received on different frequencies.
37 (d)(5)	wherein the aligning signal is distinct from the first grant signal.	The synchronization signals are different than the Random Access Response.

38	The first node of claim 37, wherein the second slot is assigned to the first node independent of the randomly generated information.	The assignment of the second slot is not related to the randomly generated information.

39	The first node of claim 37, wherein subscriber identification is transmitted from the first node subsequent to the first node receiving return of said randomly generated information.	The Phone sends an RRC Connection Request message after receiving the Random Access Response. See 3GPP TS 36.331 § 5.3.3. The RRC Connection Request contains subscriber information such as NAS UE, IMSI, or S-TMSI. *Id.*

40	The first node of claim 37, wherein the first node further comprises a touch sensitive display input device.	Certain Phones identified in Exhibit B contain a touch sensitive screen that can be used to input data to the Phone.

41	The first node of claim 37, wherein the interface is further configured to receive the aligning signal with which the first node can synchronize signals.	The primary and secondary synchronization signals are provided by a base station and enable the Phone to synchronize itself with a controller. See 3GPP TS 36.211 § 6.11.

Notes:

The particular versions of the Technical Standards referenced above are as listed below. These Technical Standards are exemplary in nature, and the analysis above applies to all past and future versions of these Standards which are substantively the same, to the extent cited above. Also, references to the Standards are for illustrative purposes only and are not meant to be complete. None of the cited portions of the 3GPP standards stand alone and other, non-cited portions of the 3GPP standards are applicable to the accused instrumentality.

3GPP TS 36.104 – Version 9.0.0.

3GPP TS 36.211 – Version 9.0.0.

3GPP TS 36.212 – Version 9.0.0.

3GPP TS 36.300 – Version 9.0.0.

3GPP TS 36.321 – Version 9.0.0.

3GPP TS 36.331 – Version 9.0.0.

EXHIBIT B

List of Currently Known Accused Devices for Nokia

This list of devices that have the ability to send and receive data via the General Packet Radio Service ("GPRS"), Enhanced GPRS ("EGPRS), and/or Enhanced Data Rates for GSM Evolution ("EDGE") standard (referred to in the chart below as "GPRS Functionality?") and/or Long Term Evolution (referred to in the chart below as "LTE Functionality?") is based on information currently available to GPNE. In particular, GPNE has relied on the devices listed on http://www.nokia.com/us-en/products/products/ (as of February 15, 2013), as well as Nokia's interrogatory responses while this case was pending in the District of Hawaii (especially Nokia's February 3, 2012 interrogatory responses, including NOK0055703-705). While GPNE has attempted in good faith to identify relevant products, GPNE reserves the right to supplement and/or amend this list with any additional devices (1) that it may learn about from public information, (2) that it may learn about during the course of discovery or (3) that are introduced to the market after the service of these preliminary infringement contentions.

Device Name/Model	GPRS Functionality?	LTE Functionality?	Touchscreen?
700	Y	N	Y
2720	Y	N	N
6350	Y	N	N
C1-01	Y	N	N
C2-01	Y	N	N
C5	Y	N	N
C5-03	Y	N	Y
C6-00	Y	N	Y
C6-01	Y	N	Y
C7	Y	N	Y
E5	Y	N	N
E6	Y	N	Y
E7-00	Y	N	Y

Lumia 710	Y	N	Y
Lumia 800	Y	N	Y
Lumia 810	Y	N	Y
Lumia 820	Y	Y	Y
Lumia 822	Y	Y	Y
Lumia 900	Y	Y	Y
Lumia 920	Y	Y	Y
N8-00	Y	N	Y
Nokia 808	Y	N	Y
X2-01	Y	N	N
X3-02	Y	N	N

List of Nokia Products Not Currently Accused

The following devices were listed in GPNE's original infringement contentions while this case was pending in the District of Hawaii. However, based on Nokia's February 3, 2012 interrogatory responses, including NOK0055703-705, it is GPNE's understanding that the following devices have not been sold in the United States during the relevant time frame and, thus, are not currently at issue. If Nokia updates its interrogatory responses or GPNE otherwise learns in discovery that any of the devices listed below were sold in the United States during the relevant timeframe, GPNE reserves the right to supplement or amend these contentions to add the relevant product(s):

Device Name/Model	GPRS Functionality?	LTE Functionality?	Touchscreen?
100	Y	N	N
101	Y	N	N
500	Y	N	Y
600	Y	N	Y
603	Y	N	Y
701	Y	N	Y
1100	Y	N	N
1110	Y	N	N
1112	Y	N	N

1200	Y	N	N
1202	Y	N	N
1203	Y	N	N
1208	Y	N	N
1209	Y	N	N
1280	Y	N	N
1600	Y	N	N
1616	Y	N	N
1650	Y	N	N
1661	Y	N	N
1662	Y	N	N
1680	Y	N	N
1800	Y	N	N
2100	Y	N	N
2220	Y	N	N
2300	Y	N	N
2310	Y	N	N
2323	Y	N	N
2330	Y	N	N
2600	Y	N	N
2610	Y	N	N
2626	Y	N	N
2630	Y	N	N
2650	Y	N	N
2652	Y	N	N
2660	Y	N	N
2680	Y	N	N
2690	Y	N	N
2700	Y	N	N
2710	Y	N	N
2730	Y	N	N
2760	Y	N	N
3100	Y	N	N
3108	Y	N	N
3109	Y	N	N
3110	Y	N	N
3120	Y	N	N
3128	Y	N	N
3200	Y	N	N
3210	Y	N	N
3220	Y	N	N

3230	Y	N	N
3250	Y	N	N
3300	Y	N	N
3310	Y	N	N
3330	Y	N	N
3350	Y	N	N
3410	Y	N	N
3500	Y	N	N
3510	Y	N	N
3530	Y	N	N
3555	Y	N	N
3600	Y	N	N
3610	Y	N	N
3650	Y	N	N
3660	Y	N	N
3710	Y	N	N
3720	Y	N	N
5000	Y	N	N
5030	Y	N	N
5070	Y	N	N
5100	Y	N	N
5110	Y	N	N
5130	Y	N	N
5132	Y	N	N
5140	Y	N	N
5200	Y	N	N
5210	Y	N	N
5220	Y	N	N
5230	Y	N	Y
5233	Y	N	Y
5235	Y	N	Y
5250	Y	N	Y
5300	Y	N	N
5310	Y	N	N
5320	Y	N	N
5330	Y	N	N
5500	Y	N	N
5510	Y	N	N
5530	Y	N	N
5610	Y	N	N
5630	Y	N	N

5700	Y	N	N
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6110	Y	N	N
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6125	Y	N	N
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6131	Y	N	N
6133	Y	N	N
6136	Y	N	N
6150	Y	N	N
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6208	Y	N	N
6210	Y	N	N
6212	Y	N	N
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6260	Y	N	N
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6290	Y	N	N
6300	Y	N	N
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6310	Y	N	N
6500	Y	N	N
6510	Y	N	N
6555	Y	N	N
6600	Y	N	N
6610	Y	N	N
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6700	Y	N	N
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6790	Y	N	N
6800	Y	N	N
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6820	Y	N	N
6822	Y	N	N
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7100	Y	N	N
7110	Y	N	N
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7230	Y	N	N
7250	Y	N	N
7310	Y	N	N
7360	Y	N	N
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7510	Y	N	N
7600	Y	N	N
7610	Y	N	N
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7700	Y	N	N
7710	Y	N	N
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8110	Y	N	N
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8310	Y	N	N
8800	Y	N	N
8810	Y	N	N
8850	Y	N	N
8855	Y	N	N
8890	Y	N	N
8910	Y	N	N
9000	Y	N	N
9210	Y	N	N
9300	Y	N	N
9500	Y	N	N
1110I	Y	N	N
3208C	Y	N	N
3510i	Y	N	N
5140i	Y	N	N
6230i	Y	N	N
6303I	Y	N	N
6310i	Y	N	N
6600I SLIDE	Y	N	N
6610I	Y	N	N
702T	Y	N	Y
7250i	Y	N	N
8600 LUNA	Y	N	N
8910i	Y	N	N
9110i	Y	N	N
9300i	Y	N	N
Asha 200	Y	N	N
Asha 201	Y	N	N
Asha 300	Y	N	Y

Asha 303	Y	N	Y
C1-00	Y	N	N
C1-02	Y	N	N
C2-00	Y	N	N
C2-02	Y	N	Y
C2-03	Y	N	Y
C2-05	Y	N	N
C2-06	Y	N	Y
C3	Y	N	N
C3-01	Y	N	Y
C5 5MP	Y	N	N
C5-04	Y	N	Y
C5-05	Y	N	Y
C5-06	Y	N	Y
C6	Y	N	Y
C7 ASTOUND	Y	N	Y
E50	Y	N	N
E5-00	Y	N	N
E51	Y	N	N
E52	Y	N	N
E55	Y	N	N
E60	Y	N	N
E6-00	Y	N	Y
E61	Y	N	N
E62	Y	N	N
E63	Y	N	N
E65	Y	N	N
E66	Y	N	N
E7	Y	N	Y
E70	Y	N	N
E71	Y	N	N
E72	Y	N	N
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E90	Y	N	N
MURAL	Y	N	N
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N72	Y	N	N
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N86	Y	N	N
N9	Y	N	Y
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N92	Y	N	N
N93	Y	N	N
N95	Y	N	N
N950	Y	N	Y
N96	Y	N	N
N97	Y	N	Y
N-GAGE QD	Y	N	N
ORO	Y	N	Y
T7	Y	N	Y
X1-00	Y	N	N
X1-01	Y	N	N
X2	Y	N	N
X2-05	Y	N	N
X3	Y	N	N
X5	Y	N	N
X5-01	Y	N	N
X6	Y	N	Y
X7-00	Y	N	Y

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Exhibit C – "processor" cont.

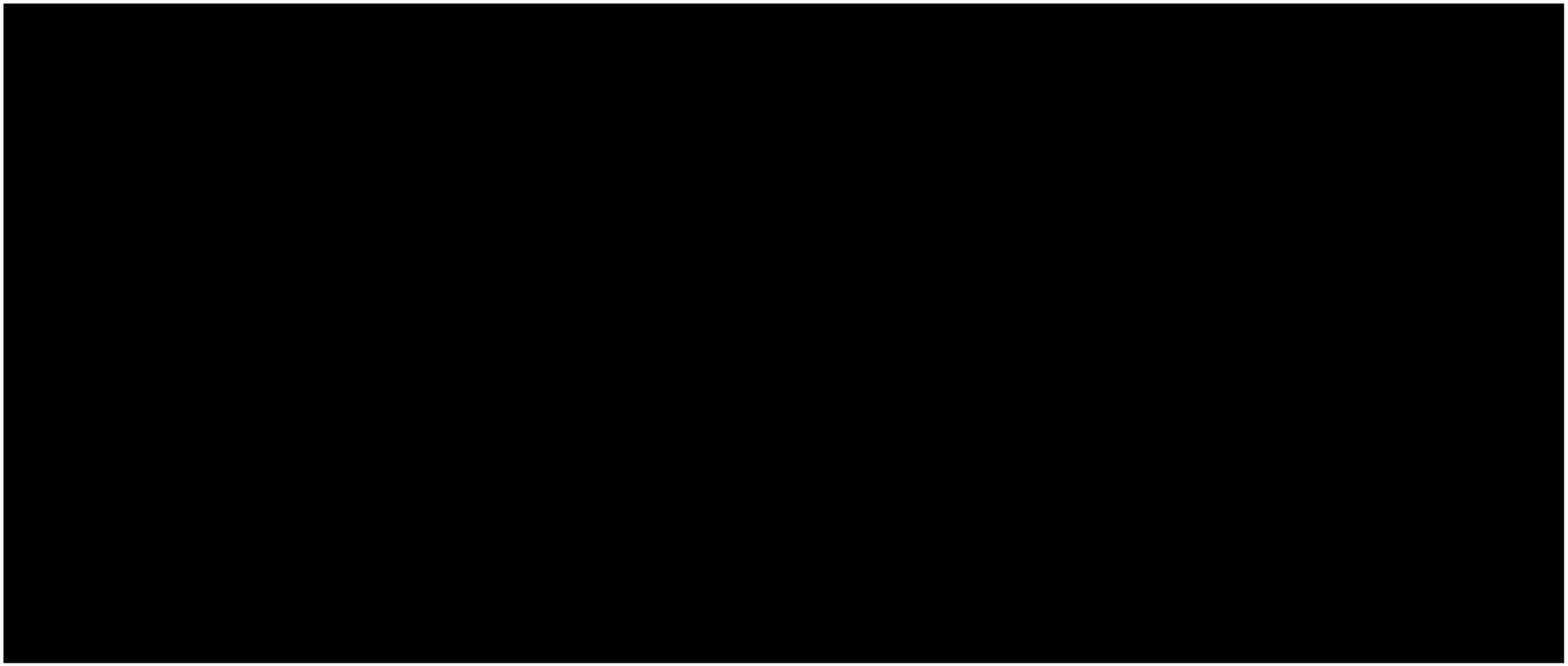

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Exhibit C – "processor" cont.

[redacted]

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Exhibit D – "memory"

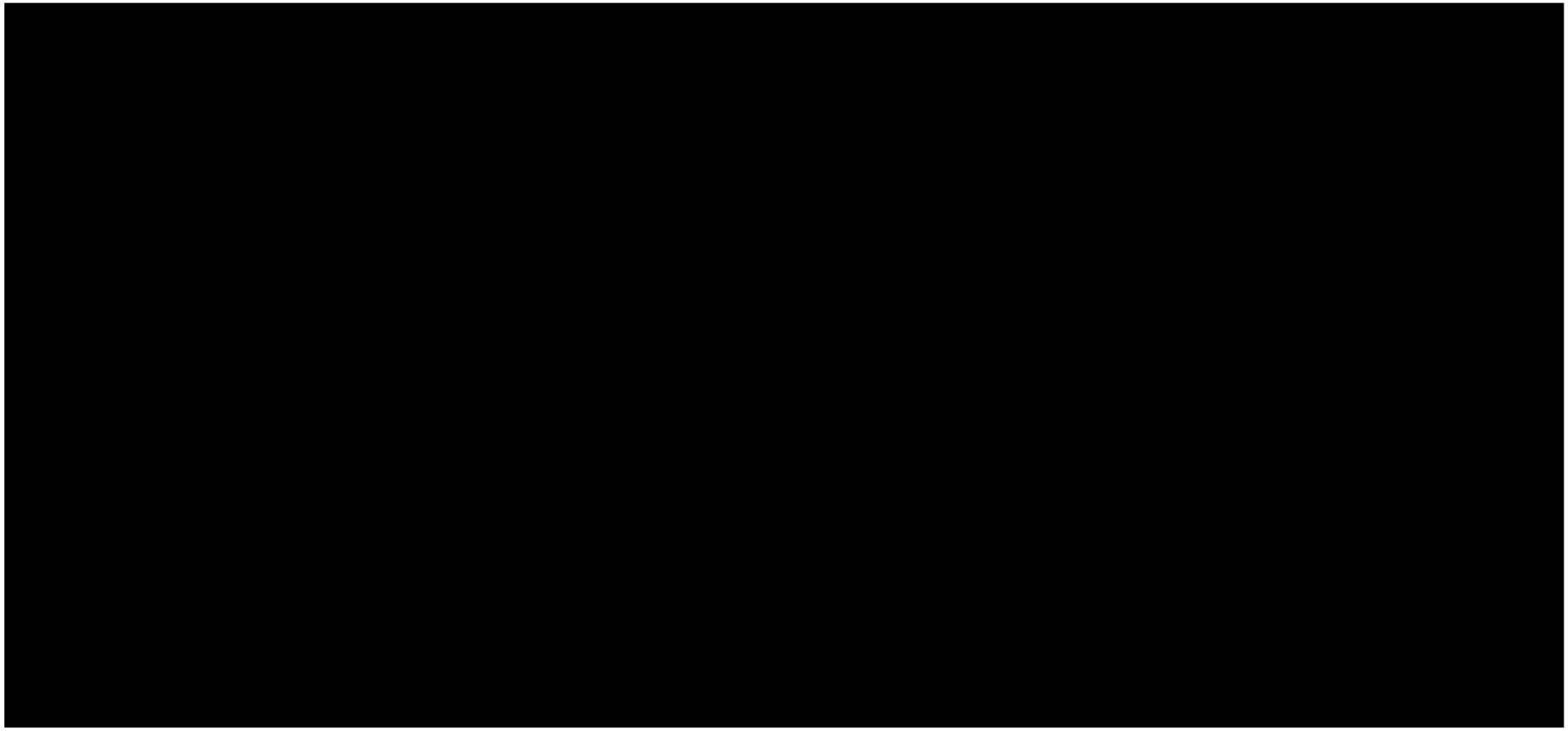

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Exhibit D – "memory" cont.

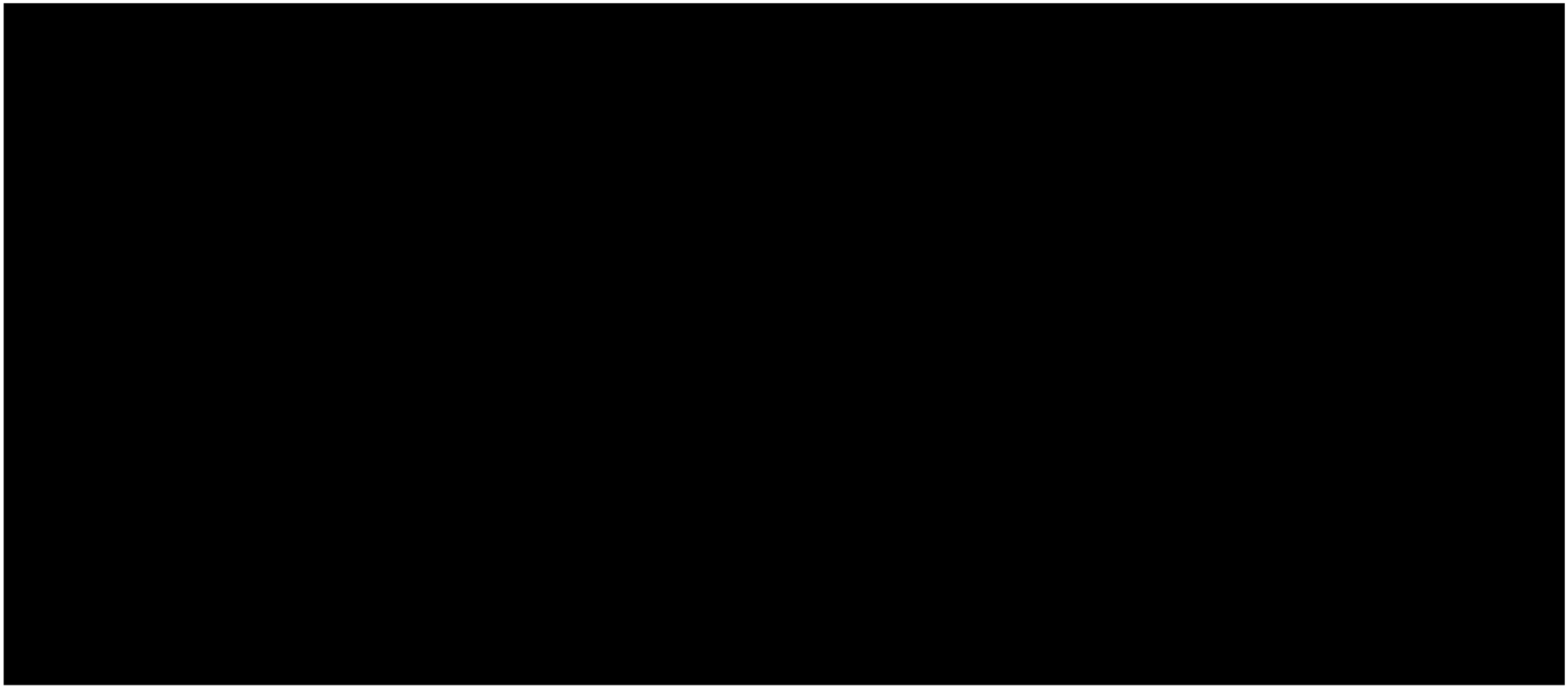

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Exhibit E – “interface”

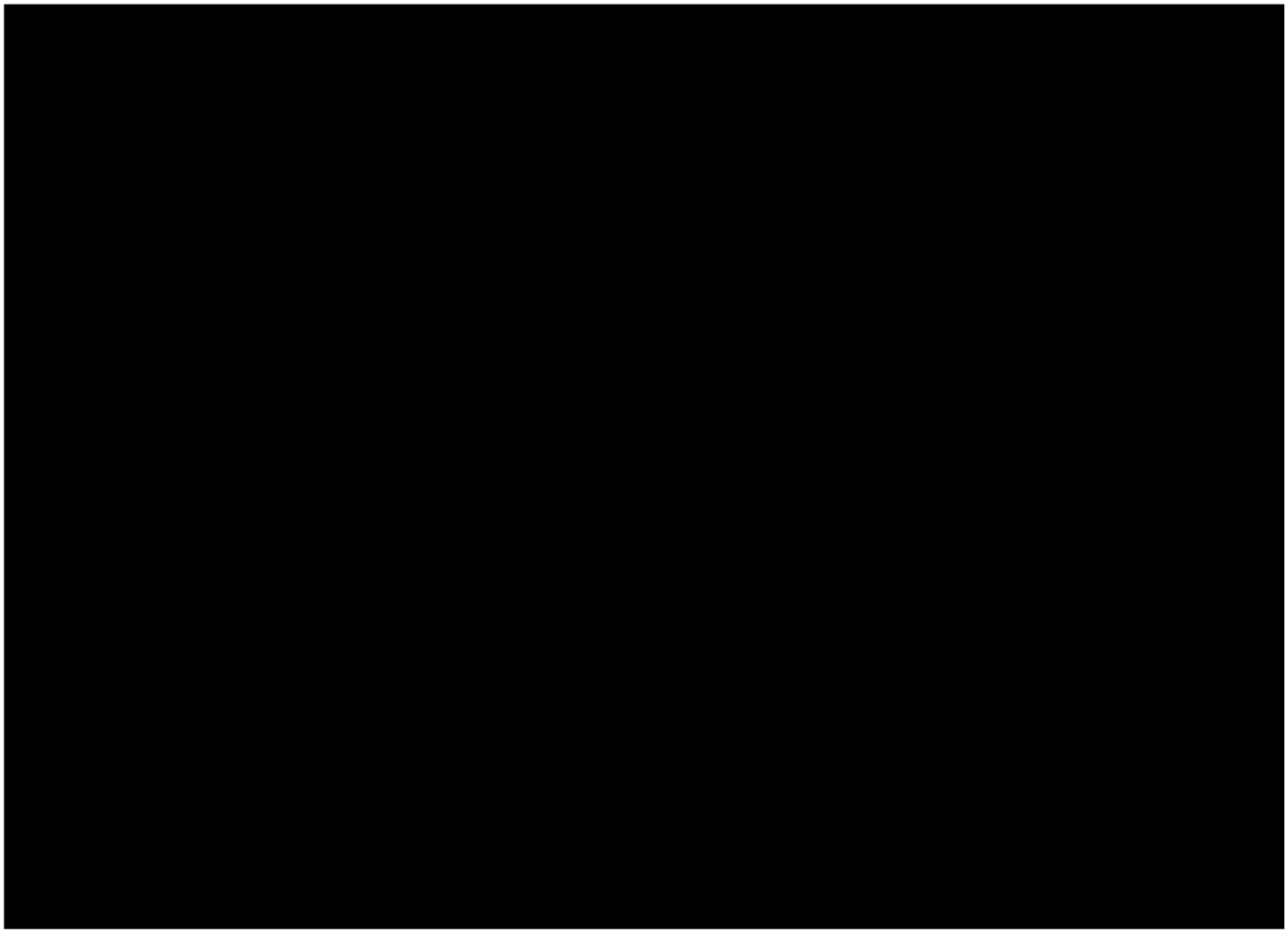

Exhibit E - ATTORNEYS' EYES ONLY